

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Tatsuya HOJO et al.                      Art Unit: 1617  
Serial No.: 10/801,229                                  Examiner: Ali SOROUGH  
Filing Date: March 16, 2004  
For: SUSTAINED RELEASE DISPENSER COMPRISING TWO OR MORE SEX  
      PHEROMONE SUBSTANCES

Assistant Commissioner for Patents  
Washington, D.C. 20231

DECLARATION PURSUANT TO RULE 132

I, Tatsuya HOJO, hereby sincerely and solemnly declares that

1. I completed a master course at graduate school of Tokyo Metropolitan University in March, 1993. Since April, 1993, I have been employed by Shin-Etsu Chemical Co., Ltd., assignee of the above-identified application where I have been engaged in research focusing mainly on sex pheromone preparations.
2. Buschmann et al. (European Patent Application 92117883.6, EP0540932A1, US 5,316,148) discloses polyhydroxybutyric acid as a pheromone-impermeable material and a pheromone-permeable film (claims 4 and 5 of US 5,316,148). A dispenser in the form of 20-cm-long high-density polyethylene tubes (A) and (B) joined in a parallel manner and a dispenser in the form of 20-cm-long polyhydroxybutyric acid tubes (C) and (D) joined in a parallel manner will be compared. The dispensers will be tested in a laboratory instead of a pear orchard.
3.  
<Experiment 1>  
A dispenser in the form of 20-cm-long high-density polyethylene tubes (A) and (B) joined in a parallel manner was prepared in the same manner as in Example 1 of the present specification. The dispenser was placed in a constant temperature bath of 30°C having a constant air flow of 1.0m/s to accelerate release of the pheromone substances from the dispenser. Residual percentages of each pheromone component of each species of insects for the tubes were measured.

<Comparative Experiment 1>

A dispenser in the form of 20-cm-long polyhydroxybutyric acid tubes (C) and (D) joined in a parallel manner was prepared in the same manner as in Example 1 of the present specification except for polyhydroxybutyric acid instead of high-density polyethylene. The dispenser was placed in a constant temperature bath of 30°C having a constant air flow of 1.0m/s to accelerate release of the pheromone substances from the dispenser. Residual percentages of each pheromone component of each species of insects for the tubes were measured.

4. The results are shown in Tables below.

Experiment 1

Elapsed days (day)	Residual percentage (%)		
	<i>Grapholita molesta</i>	Leaf roller	<i>Carposina niponensis</i>
0	100	100	100
30	45.7	71.5	87.6
62	12.1	41.8	72.7
91	5.1	24.3	59.6

Comparative Experiment 1

Elapsed days (day)	Residual percentage (%)		
	<i>Grapholita molesta</i>	Leaf roller	<i>Carposina niponensis</i>
0	100	100	100
30	99.8	99.9	100
62	99.6	99.8	100
91	99.3	99.6	99.9

The dispenser containing the tubes made of the common material of high density polyethylene excelled in release in comparison with the dispenser containing the tubes made of the common material of polyhydroxybutyric acid. The latter released only 0.1 to 0.7% of the substances after 91 days.

5. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

Dated: 04, March 2011

Tatsuya Hojo